BRUHAT BANGALORE MAHANAGARA PALIKE

Name of work:-Establishment of RO plant children play eyuipments and open gym equipments in Kempapura and surrounding areas in ward no.07, Byatarayanapura Kodigehalli Sub Division.

Measurements Taken On :

ABSTRACT OF MEASUREMENT SHEET - 1st and FINAL BILL

Item No	Description	Unit	Quantity	Approved Tender Rates	Amount	Remarks
Item No. 1	Earthwork in surface excvation in ordinary soil for levelling and lowerng the ground manually (other than foundation of buildings, culverts road drains and trenches of pipe lines and cables) and removing the excavated stuff to a distance not exeeding 50m and lift upto 1.5m, excavated stuff to a distance not exceeding 50m and lift upto 1.5m excavated syrface levelled and neatly dressed, disposed earth to be levelled after breaking of clods and neatly dressed as per specifications and as per the directions of the Engineer-in-charge of the work .	Cum	44.64			
	present Qty	Cum	44.64			
	Previous Bill Qty	Cum	-			
	Total	Cum	44.64			
	Tender Qty	Cum	36.26			
	Now to be paid	Cum	44.64			
	Quantity Limited to	Cum	36.26	166.42	6034.39	
Item No. 02	Providing and laying in position plain cement concrete of nominal mix 1:4:8 using 40mm and down size graded granite metal machine mixed, conrete laid in layers not exceeding 15 cms. Thick well compacted in foundation and plinth, including cost of all materials labour, HOM of machinery, curing complete as per specification . and as per the directions of the Engineer-in-charge of the work .	Cum	7.41			
	present Qty	Cum	7.41			
	Previous Bill Qty	Cum	-			
	Total	Cum	7.41			
	Tender Qty	Cum	7.41		38228.34	
	Now to be paid	Cum	7.41	5159.02	38246.39	
Item No. 03	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240 kgs with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed concrete laid in layers not exceeding 15cms thick well compacted in foundation plinth and cills including cost of all materials, labour HOM of machinery curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .	Cum	2.31			
	present Qty	Cum	2.31			
	Previous Bill Qty	Cum	-			
	Total	Cum	2.31			
	Tender Qty	Cum	2.45			
	Now to be paid	Cum	2.31	5767.00	13321.77	

Item No. 04	Providing and fixing open gym euipments and children play equipments in Amruthalli., and as per the directions of the Engineer-in-charge of the work .					
	TMP 013 WONDER PLAY	**Nos**	**1.00**			
	Tender Qty	**Nos**	**1.00**			
	Now to be paid	**Nos**	**1.00**	**1866124.00**	**1866124.00**	
	GST CHARGES 18%				**335902.32**	
					2202026	
Item No.05	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .	**Cum**	**11.59**			
	present Qty	**Cum**	**11.59**			
	Previous Bill Qty	**Cum**	**-**			
	Total	**Cum**	**11.59**			
	Tender Qty	**Cum**	**12.06**		52409.5.	
	Now to be paid	**Cum**	**11.59**	**4521.96**	**52414.04**	
Item No.06	Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .	**Cum**	**3.81**			
	present Qty	**Cum**	**3.81**			
	Previous Bill Qty	**Cum**	**-**			
	Total	**Cum**	**3.81**			
	Tender Qty	**Cum**	**4.50**			
	Now to be paid	**Cum**	**3.81**	**5405.40**	**20594.57**	
Item No.07	Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. and as per the directions of the Engineer-in-charge of the work	**Cum**	**21.64**			
	present Qty	**Cum**	**21.64**			
	Previous Bill Qty	**Cum**	**-**			
	Total	**Cum**	**21.64**			
	Tender Qty	**Cum**	**18.79**			
	Now to be paid	**Cum**	**21.64**			
	Quantity Limited to	**Cum**	**18.79**	**137.16**	**2577.24**	
Item No.08	Providing flooring with 60 cms.x 60 cms. size Vitrified glazed tiles of approved quality & make, fixed on top of existing flooring fixed with suitable adhesive, including cutting the tiles to the required size and fixing etc., complete and as per the directions of the Engineer-in-charge of the work .	**Sqm**	**16.64**			
	present Qty	**Sqm**	**16.64**			
	Previous Bill Qty	**Sqm**	**-**			
	Total	**Sqm**	**16.64**			

	Tender Qty	**Sqm**	**10.92**			
	Now to be paid	**Sqm**	**16.64**			
	Quantity Limited to	**Sqm**	**10.92**	**1154.52**	**12607.36**	
Item No.09	Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour and as per the directions of the Engineer-in-charge of the work .TECHNICAL SPECIFICATIONS Flow Rate:Feed Water : 5000 LPH Treated Water : 3000 LPH Reject Water : 2000 LPH RAW WATER PUMP Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter? SAND MEDIA FILTER Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members ACTIVATE CARBON FILTER Purpose:- To remove the total color, smell, odor from the water. Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system DOSING SYSTEM urpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes MICRON FILTER urpose : To HIGH PRESSURE PUMP remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.	**Nos**	**1.00**			
	present Qty	**Sqm**	**1.00**			
	Previous Bill Qty	**Sqm**	**-**			
	Total	**Sqm**	**1.00**			
	Tender Qty	**Sqm**	**1.00**			
	Now to be paid	**Sqm**	**1.00**	**946000.00**	**946000.00**	
Item No.10	Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 mm thick tuve purlines, roof panel of 30 mm sandwitch puf panel density : 40 kg and wall panel of 30 mm sandwitch puf pannel density : 40 kgs (polyurethane foam) with noth side G I Colour coated sheet ancillaries like C-channels, angles, sealene etc, door of size 1.8 x 2.0 m an alluminium powder coated window of size 1.00 x 2.00 m 1 No of structural glazing (fixed and sliding One side slope as per elclosed drawing cabin of size etc (Approved Quoated Rate) (10 x 12 Ft) and as per the directions of the Engineer-in-charge of the work .	**Nos**	**1.00**			
	present Qty	**Nos**	**1.00**			
	Previous Bill Qty	**Nos**	**-**			
	Total	**Nos**	**1.00**			
	Tender Qty	**Nos**	**1.00**			
	Now to be paid	**Nos**	**1.00**	**250204.80**	**250204.80**	
				SUB TOTAL AMOUNT	**3544026.88**	3544004.29
				Add KRIDL @ 10%	**354402.69**	354400.48
				Labour Cess @ 1%	**35440.27**	35440.04
				TOTAL AMOUNT	**3933869.84**	3933844.75

Asst. Exe. Engr.
AE(W)

Assistant Executive Engineer,
R.R. Nagar, Sub-Division,
KRIDL, BBMP, Bangalore

Assistant Executive Engineer.
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

BRUHATH BANGALORE MAHANAGARA PALIKE

Name of work:-Establishment of RO plant children play eyuipments and open gym equipments in Kempapura and surrounding areas in ward no.07, Byatarayanapura Kodigehalli Sub Division.

SL NO	Description of Item	Unit	No	Length (m)	Breadth A	Breadth B	Breadth Avg	Depth (m)	Quantity
1	Earthwork in surface excvation in ordinary soil for levelling and lowerng the ground manually (other than foundation of buildings, culverts road drains and trenches of pipe lines and cables) and removing the excavated stuff to a distance not exeeding 50m and lift upto 1.5m, excavated stuff to a distance not exceeding 50m and lift upto 1.5m excavated syrface levelled and neatly dressed, disposed earth to be levelled after breaking of clods and neatly dressed as per specifications and as per the directions of the Engineer-in-charge of the work .								
	For children play equipments	Cum	4	0.45			0.45	0.30	0.24
	For Leveling Ground	Cum	1	4			3.5	0.15	2.10
	Centre Line 2 Nos	Cum	2	3.65			1.2	1.20	10.51
		Cum	2	3.05			1.2	1.20	8.78
	Over Bureden	Cum	1	5			4.6	1.00	23.00
								Total	**44.64**
								Quantity Limited To	**36.26**
2	Providing and laying in position plain cement concrete of nominal mix 1:4:8 using 40mm and down size graded granite metal machine mixed, conrete laid in layers not exceeding 15 cms. Thick well compacted in foundation and plinth, including cost of all materials labour, HOM of machinery, curing complete as per specification . and as per the directions of the Engineer-in-charge of the work .								
	For children play equipments	Cum	4	0.45			0.45	0.15	0.12
	Wall Portion		2	3.65			1.20	0.15	1.31
			2	3.05			1.20	0.15	1.10
	Flooring		1	3.20			2.60	0.20	1.66
	Building Suroundings		2	3.65			1.20	0.20	1.75
			2	3.05			1.20	0.20	1.46
								Total	**7.41**
3	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240 kgs with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed concrete laid in layers not exceeding 15cms thick well compacted in foundation plinth and cills including cost of all materials, labour HOM of machinery curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .								
	For children play equipments	Cum	4	0.45			0.45	0.125	0.10
		Cum	2	3.45			0.60	0.125	0.52
		Cum	2	2.90			0.60	0.125	0.44
	Building Suroundings	Cum	2	3.65			0.75	0.125	0.68
		Cum	2	3.05			0.75	0.125	0.57
								Total	**2.31**
4	Providing and fixing open gym euipments and children play equipments in Amruthalli., and as per the directions of the Engineer-in-charge of the work .								
	TMP 013 WONDER PLAY		1						1
								Total	1
	RO PLANT								
5	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .								
	Wall Portion		2	3.65			0.80	0.60	3.50
			2	3.05			0.80	0.60	2.93
	Wall Portion		2	3.65			0.70	0.55	2.81
			2	3.05			0.70	0.55	2.35
								Total	**11.59**

C & RC. 6/8 — NDP AE(NS) 15/8/2020

24/8 — NDP AE(NS) 24/8/2020

25/8 — NDP AE(NS) 25/8/2020

21/9 — NDP AE(NS) 21/9/2020

C & RC. 30/09

C & RC.

Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P. Bangalore.

Assistant Executive Engineer, R.R. Nagar, Sub-Division, KRIDL, BBMP, Bangalore.

SL NO	Description of Item	Unit	No	Length	Breadth		Breadth	Depth	Quantity
				(m)	A	B	Avg	(m)	
6	Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. and as per the directions of the Engineer-in-charge of the work .								
	Wall Portion		2	3.45			0.60	0.50	2.07
			2	2.90			0.60	0.50	1.74
								Total	**3.81**
7	Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. and as per the directions of the Engineer-in-charge of the work .								
	Qty vide From item No 1								21.64
								Total	**21.64**
								Quantity Limited To	**18.79**
8	Providing flooring with 60 cms.x 60 cms. size Vitrified glazed tiles of approved quality & make, fixed on top of existing flooring fixed with suitable adhesive, including cutting the tiles to the required size and fixing etc., complete and as per the directions of the Engineer-in-charge of the work .								
		Sqm	2	3.20			2.60		16.64
								Total	**16.64**
								Quantity Limited To	**10.92**
	RO Plant								
	9 Providing reverse osmosis suystem to cover 2000 Liters of High TDS water per hour and as per the directions of the Engineer-in-charge of the work .								
	TECHNICAL SPECIFICATIONS								
	Flow Rate:								
	Feed Water : 5000 LPH								
	Treated Water : 3000 LPH								
	Reject Water : 2000 LPH								
	RAW WATER PUMP								
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?								
	SAND MEDIA FILTER								
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members								
	ACTIVATE CARBON FILTER								
	Purpose:- To remove the total color, smell, odor from the water.								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system								
	DOSING SYSTEM								
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes								
	MICRON FILTER								
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.								
	HIGH PRESSURE PUMP								
	Purpose : To feed the reverse Osmosis membrane at pressure more than the								
	RO membrane housing.								
	Purpose : To pack membrane and operate at high pressure.								
	RO MEMBRANES								
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.								
	RO CLEANSING SYSTEM								

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, BBMP,
Bangalore.

Assistant Executive Engineer,
R.R. Nagar, Sub-Division,
KRIDL, BBMP, Bangalore

SL NO	Description of Item	Unit	No	Length	Breadth		Breadth	Depth	Quantity
				(m)	A	B	Avg	(m)	
	ELECTRICAL PANEL								
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.								
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.								
	INSTRUMENTATION								
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system								
	PH DOSING SYSTEM								
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.								
		Nos	1						1.00
								Total	1.00
10	Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 mm thick tuve purlines, roof panel of 30 mm sandwitch puf panel density : 40 kg and wall panel of 30 mm sandwitch puf pannel density : 40 kgs (polyurethane foam) with noth side G I Colour coated sheet ancillaries like C-channels, angles, sealene etc, door of size 1.8 x 2.0 m an alluminium powder coated window of size 1.00 x 2.00 m 1 No of structural glazing (fixed and sliding One side slope as per elclosed drawing cabin of size etc (Approved Quoated Rate) (10 x 12 Ft) and as per the directions of the Engineer-in-charge of the work .								
		Nos	1						1.00
								Total	**1.00**

NMP
DE(W&S)
21/9/2020

Assistant Executive Engi
Kodigehalli Sub Divisi
Yelahanka Zone, B.B.M
Bangalore.
21/9/2020.

Assistant Executive Engineer,
R.R. Nagar, Sub-Division,
KRIDL, BBMP, Bangalore